UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,040	07/07/2003	Magnus Fagrell	6796-000003/US/DVA	4704

30593 7590 06/22/2005

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER	
HOANG, TU BA	

ART UNIT	PAPER NUMBER
3742	

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/613,040	FAGRELL ET AL.	
	Examiner	Art Unit	
	Tu Ba Hoang	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

Applicant's arguments filed may 09, 2005 have been fully considered but they are not persuasive as for the following reasons:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 is vague and indefinite for being incomplete for omitting essential structural cooperative relationships between elements such as heating apparatus, applicator, deflector, waveguide, and resonant cavity, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. It is also unclear how such resonant cavity defined. It is noted that in order to heat the sample, it must be placed in the recited heating apparatus or the recited applicator at which the sample is inserted therein must be placed within the heating apparatus and in order to understand the metes and bound of the claimed invention, such structural cooperative relationship between the recited "resonant cavity" and at least the "applicator" is needed since it appears that the resonant cavity can also be the heating apparatus or the waveguide can also be the applicator.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Minakawa et al (EP 0552807) cited by the Applicants. Minakawa et al shows a microwave oven or heating apparatus for heating an object or sample, the oven comprises a heating chamber 1 having an applicator or turntable plate 8 at which the sample can be inserted onto, the heating chamber 1 is also defining a resonant cavity, a magnetron 3 for generating electromagnetic radiation at a predetermined output power level through a waveguide 2, a deflector or reflector 9 (shown in Figures 1-2) is rotated (Figure 2) for adjusting a coupling factor between the waveguide 2 and the resonant cavity or heating chamber 1 (i.e., impedance matching, "a metal reflector (9) provided rotatably inside the waveguide (2) for adjusting the impedance of a load at the heating chamber side by its rotation angle" at set forth in the paragraph number 57 of the front page), and a control circuit including different programs for controlling the rotation angle of the reflector 9 according to methods with predetermined time periods from the start of operation of the microwave oven (i.e., the sample has it initial temperature as a first temperature, after being heated to obtain a second higher temperature at the predetermined time period with the rotation of the deflector for adjusting the coupling

factor in response to a variation in the type of sample (i.e., dielectric properties which is an inherency characteristic).

Claims 25-33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest the position of the deflector is determined based on the amount of measured power of electromagnetic radiation reflected from the applicator.

Remark

Regarding Applicants' argument that in claim 23, the necessary structural cooperative relationship between all elements are adequately recited in the claim and does not amount to a gap between the structural connections, therefore, it is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all of the elements operate concurrently toward the desired result. The Examiner disagrees as for the reason set forth above. There is no structural cooperative relationships between at least the "heating apparatus" and the "applicator" in order to heat the sample inserted therein (as it appeared that the applicator itself can be heated). There is no structural cooperative relationships between at least the "applicator" and the "waveguide" since coupling factor can be adjusted between the waveguide and the resonant cavity or between the waveguide and the applicator and thus one need to know such relationships in order to practice the invention and in this case, even thought it is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrentlytoward the desired result, there are clear no interdependency between the "heating apparatus", the "applicator", the "radiation", the "deflector", the "waveguide", and the "resonant cavity" in the claim. Therefore, the rejection of the claim under 112, second paragraph is remained.

In response to applicant argument over the rejection of the claims (claims 23-24) under 35USC 102(b) as being anticipated by Minakawa et al (EP 0552807), Applicants have traversed the rejection based on the argument that Minakawa fails to disclose or suggest, inter alia, "rotating a deflector for adjusting a coupling factor between a waveguide and a resonant cavity", as recited in claim 23. Minakawa merely discloses a microwave oven having among other things, ...a metal reflector 9 for adjusting the impedance of a load at the side of the heating chamber via its rotation. Minakawa discloses rotating the metal deflector 9 to adjust the impedance of the load, rather than adjusting a coupling factor between a waveguide and a resonant cavity as recited in claim 23. Minakawa is completely silent with regard to the resonant cavity and is considered non-analogous art. (on page 3 of the remark, emphasis added). And further, Minakawa discloses determining impedance in a heating chamber depending upon the magnitude of load and position of the food item in a microwave oven. Rather, the present invention discloses a microwave heating apparatus for chemical reaction

mixtures having a resonant cavity in which the resonance conditions and the coupling factors of radiation are adjustable and therefore concluded Minakawa fails to disclose or suggest "rotating a deflector for adjusting a coupling factor between a waveguide and a resonant cavity" (page 4 of the remark, emphasis added).

The Examiner strongly disagrees as for the following reasons:

First, in fact Minakawa was an analogous art cited by the Applicants in which it also was directed to a microwave heating apparatus.

Second, the Examiner's position is that the heating chamber 1 of Minakawa was in fact defining the recited resonant cavity.

and Third, impedance matching or impedance in the heating chamber of Minakawa is in fact the recited coupling factor between the waveguide and the recited resonant cavity or heating chamber. Applicants' attention is directed to page 5, lines 13-31 of the specification of the present application, "the impedance of the waveguide must be at least substantially matched with the impedance of the applicator and the coupling factor defined as the ration between the impedance of the wave guide and the impedance of the applicator". Thus, it is clear that impedance matching in light of the present application is also the same as taught by the prior art and such impedance is exactly the same as coupling factor as intended.

In response to applicant's argument that Minakawa is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, as previously indicated, it was in fact within the field of Applicants' endeavor.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., chemical reaction mixtures, whose dielectric properties vary during the heating process, a dummy load, a waveguide forming two arms, the deflector is positioned in the waveguide near the applicator to optimize the amount of absorbed power, the deflector forms a resonant cavity with the waveguide so as to affect the electrical distance for at least part of the electromagnetic wave guided to the applicator, and etc...) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-fri from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tu Ba Hoang
Primary Examiner
Art Unit 3742

June 20, 2005